

Chemical Kinetics

Difference between Rate and Rate constant.

(a) It gives the velocity of conversion of reactant into product at any instant.

(b) It depends upon the concentration of reactant at any instant.

(c) Rate decreases with time

(a) It is a constant value

(b) It does not depend upon the concentration of reactants.

(c) It remains constant.

Difference between order and Molecularity of a chemical reaction

Molecularity

order.

(a) It depends upon the no. of molecules of reactant.

(b) It is theoretical value

(c) It is comp. no

(a) It depends upon the change in concentration of reactant.

(b) It is expt. value.

It may be comp. or fraction no.

Factors Governing the rate of a Chemical reaction.

Following are the factors which govern the rate of a chemical reaction

(a) Temp.: With the increase of

temp. rate of chemical reaction increases. For example reaction between

oxalic acid and $KMnO_4$ increases when the mixture is slightly heated

(b) Concentration of Reactant:

With increase in concentration of reactant rate increases.

(c) Physical state of Reactant

As the surface area increases rate of chemical reaction increases.

(d) Nature of Reactant:

Ionic reactions or reaction of

polar compounds are faster than non polar compounds.

(e) Effect of catalyst: Presence of catalyst affects the rate of

chemical reaction. Reaction between H_2 and O_2 is too much slow but in presence of Pt catalyst rate increases.